



## THEORY OF NUMBERS

21:640:456 (3 credits)

### COURSE DESCRIPTION:

Divisibility of integers; the series of primes; number-theoretic functions; continued fractions; congruences; diophantine equations; quadratic residues; the Pell equation.

### PREREQUISITE:

21:640:238 (Foundations of Modern Math), or permission of instructor.

### TEXTBOOK:

"Elementary Number Theory," (9<sup>th</sup> edition), by Jones, published by Springer.

DEPARTMENT WEB SITE: <http://www.ncas.rutgers.edu/math>

### THIS COURSE COVERS THE FOLLOWING:

We will introduce some concepts and theorems in number theory. Topics include common divisor, prime number, congruence, Chinese remainder theorem, Euler function, quadratic residue, arithmetic function, etc. Other topics in textbook include Riemann zeta function, sum of squares, Fermat's Last Theorem. While we cannot discuss these in detail, you are encouraged to read by yourself. You will also be asked to write some proofs.

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